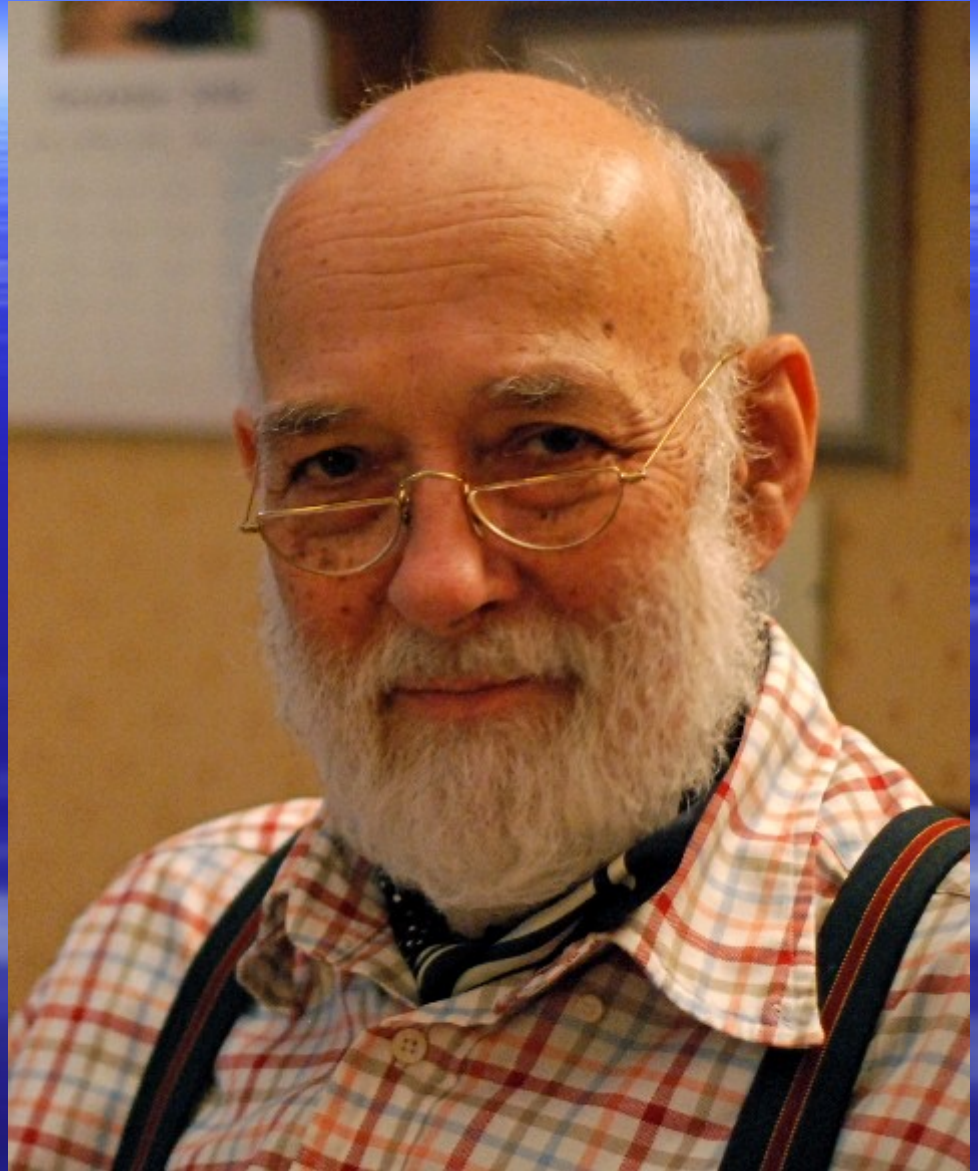


Martin Turner

a lifetime contribution to
X-ray astronomy



One of the ‘unsung heroes’ of X-ray Astronomy in Europe

- Milano (Università degli Studi)
 - 1969-1972: gamma-ray astronomy, TD-1A, Cos-B
- Leicester
 - 1973-1976 **Ariel 5 (1974-1980)**
 - 1976-1983 **EXOSAT (1983-1986)**
 - 1983-1988 **Ginga (1987-1991)**
 - 1988-1990 **Jet-X / Spectrum-X-Gamma**
 - 1990-2009 **XMM-Newton (1999 -)**
 - 1996-2009 **XEUS - IXO**

EXOSAT - the first X-ray mission operating in deep space

Martin led the Medium Energy (ME) instrument team from 1976 to the launch in 1983

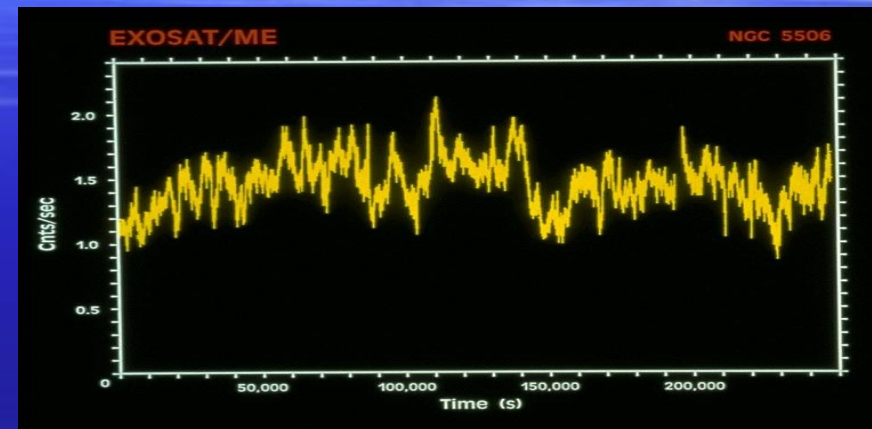
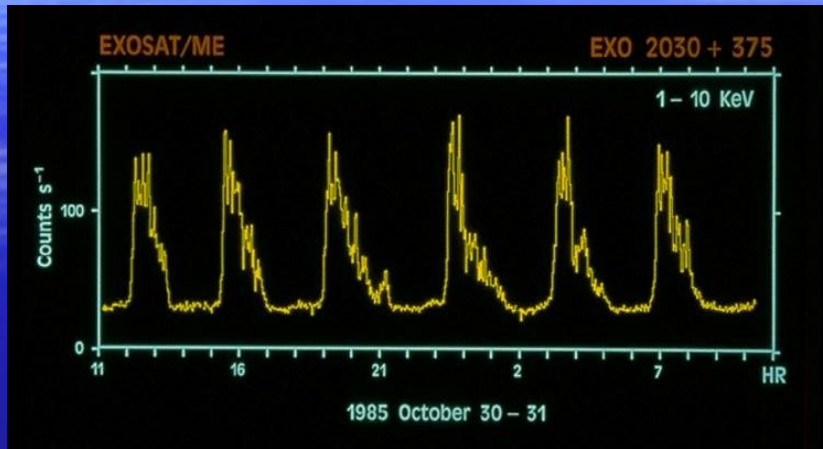
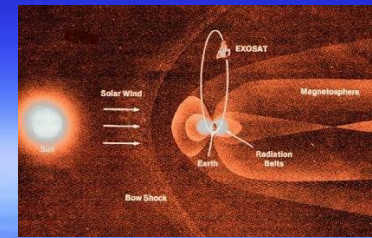


an array of eight proportional counters, with a total geometric area of 1600 cm^2 and 45 arcmin FWHM field of view

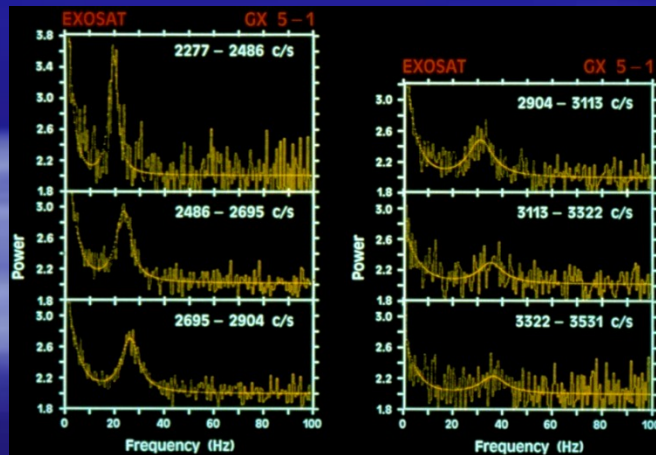
offset capability of half array and all Be detectors to reduce deep space background

EXOSAT

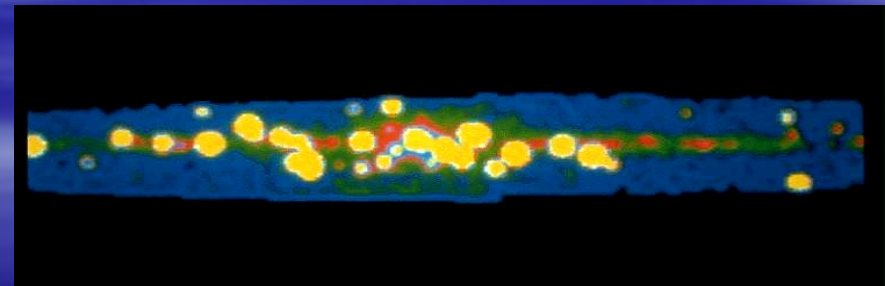
1780 observations over 3 years,
with unique 'long looks'



Discovery that short-timescale variability is
common in Seyferts



Discovery of QPOs in NS X-ray binaries



EXOSAT ME mapping of the Galactic plane: discovery
of the X-ray Galactic Ridge - made possible by the
narrow FOV of the EXOSAT ME collimators

but for Martin, there was little time to enjoy the data,
before moving on shortly after the EXOSAT launch in
1983 to the next challenge

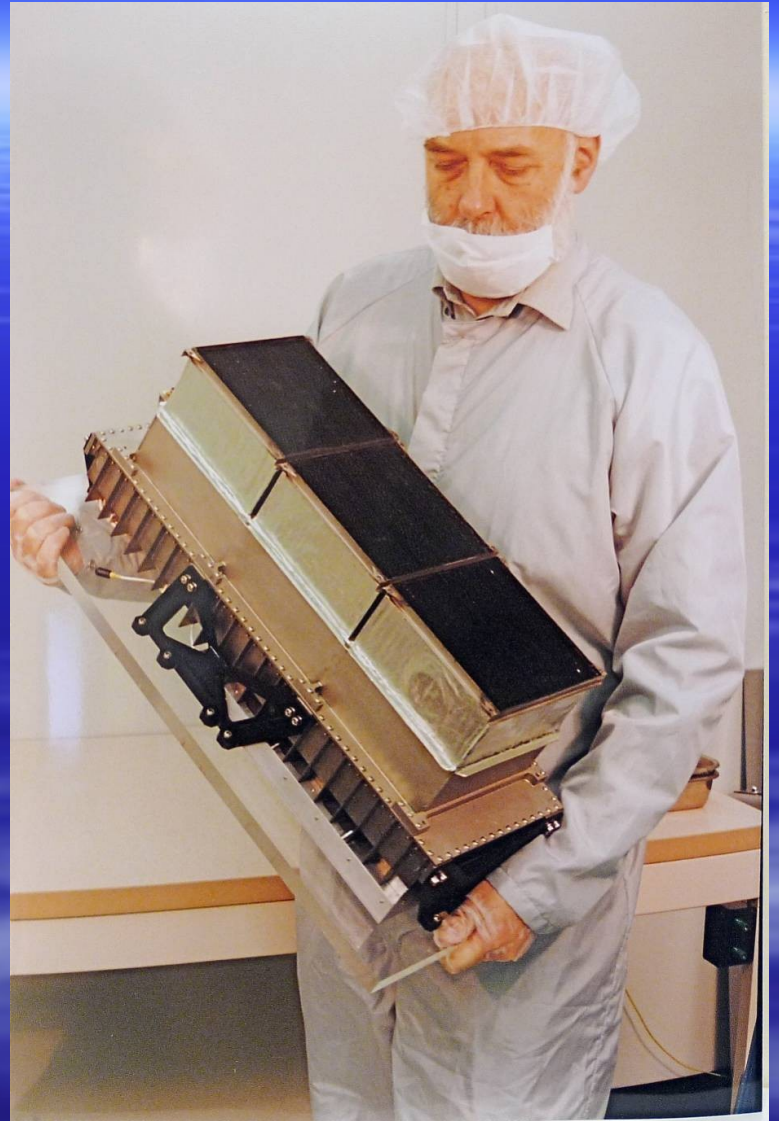
GINGA (operational 1987 - 1991)

From 1883-1988 Martin led the UK team that built the detectors for the Ginga LAC



8 multicell proportional counters
with effective area 4000 cm^2 ,
energy band 1.5-37 keV and
 $\text{FOV} = 0.8^\circ \times 1.7^\circ$

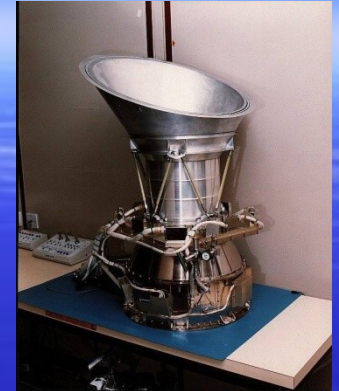
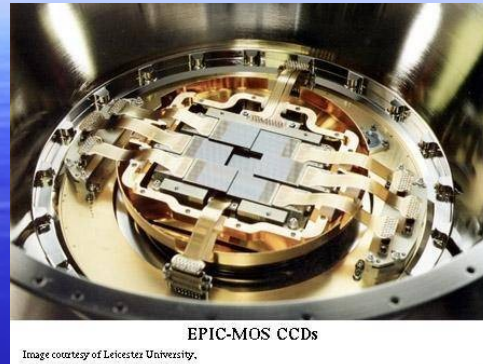
Handling one of the GINGA
LAC detectors with typical
loving care



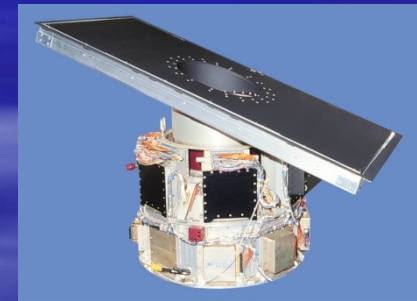
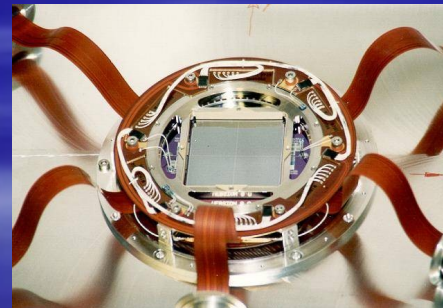
then – once more – with little time to enjoy the science – Martin was assigned to **JET-X** in 1988, and then to the **EPIC MOS** team in 1990 as **XMM** got the go-ahead

XMM-Newton

- Martin was elected to lead the international MOS team
- then in 1997 he succeeded Nanni Bignami as the PI for the whole EPIC instrument
- and continued in that role up to and beyond launch



EPIC-MOS camera, built by a consortium led by University of Leicester and including University of Birmingham, CEA/Saclay, IAS/Orsay, CESR Toulouse, IFC Milano, ITESRE Bologna and OAPA Palermo



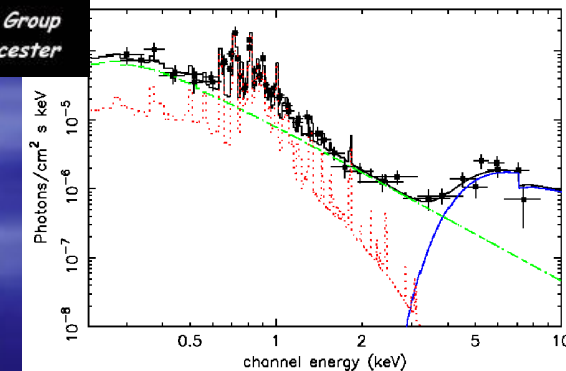
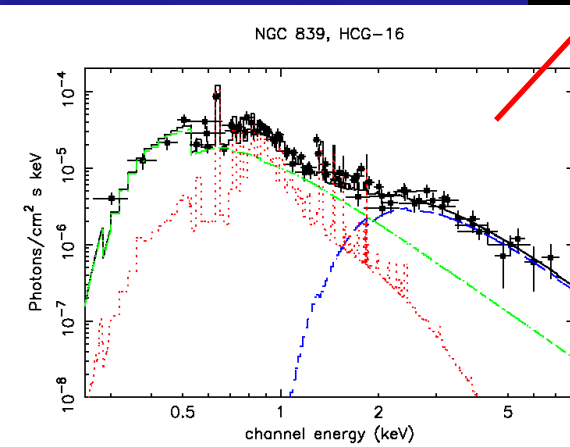
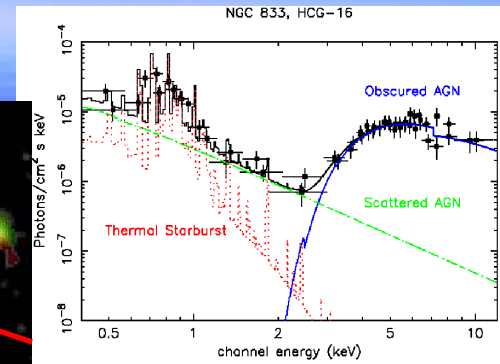
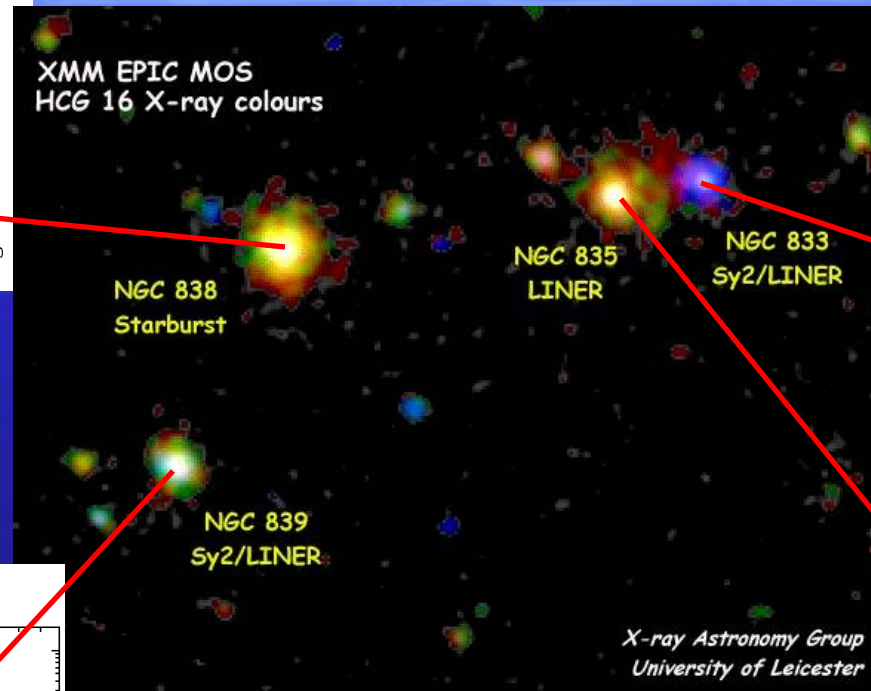
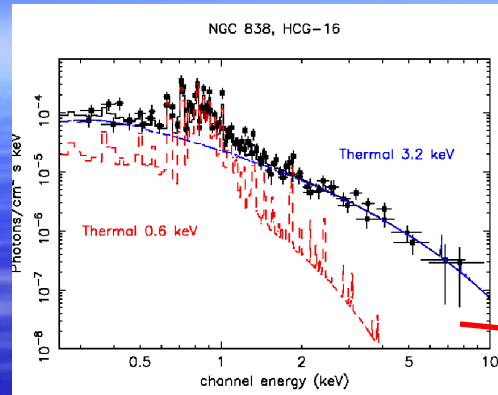
EPIC-pn camera, built by the MPE (Garching) and the Astronomisches Institut in Tübingen.

XMM first light press conference



a proud moment for Martin (and the EPIC team)

Galaxies, Starbursts and Black Holes in HCG16



and a chance to demonstrate he retained a real interest in the science

- while continuing to lead the EPIC team
- Martin was taking an increasingly active role in the planning for Europe's next X-ray mission
- where – again – his 'feel' for space instrumentation, his energy and enthusiasm, and his diplomatic skills, were of great value

XEUS (1996-2008 → IXO)

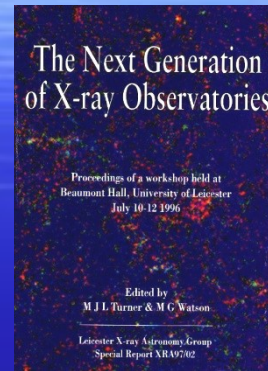
.....we find Martin taking a pivotal role in the development of the XEUS concept for a dozen years from its beginnings at the 1996 workshop in Leicester

Xeus: an X-ray Observatory for the Post-XMM era

**M.J.L Turner¹, G.G.C Palumbo², J.A.M Bleeker³, G Hasinger⁴, A Peacock⁵,
J Trümper⁶**

... leading in 2007 to the XEUS Proposal to ESA's Cosmic Visions for which Martin was Co-PI with Günther Hasinger

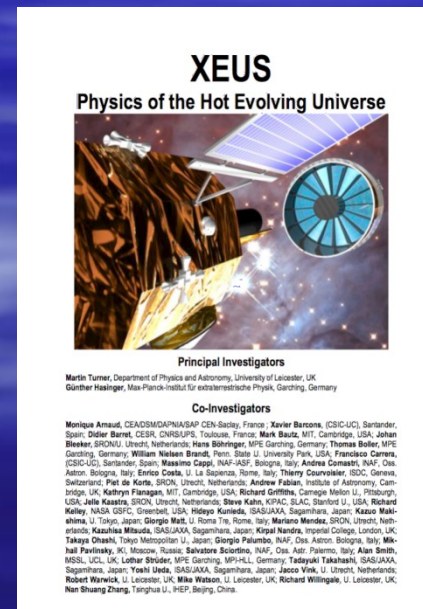
... and finally to the merger with Con-X in 2008, to form IXO



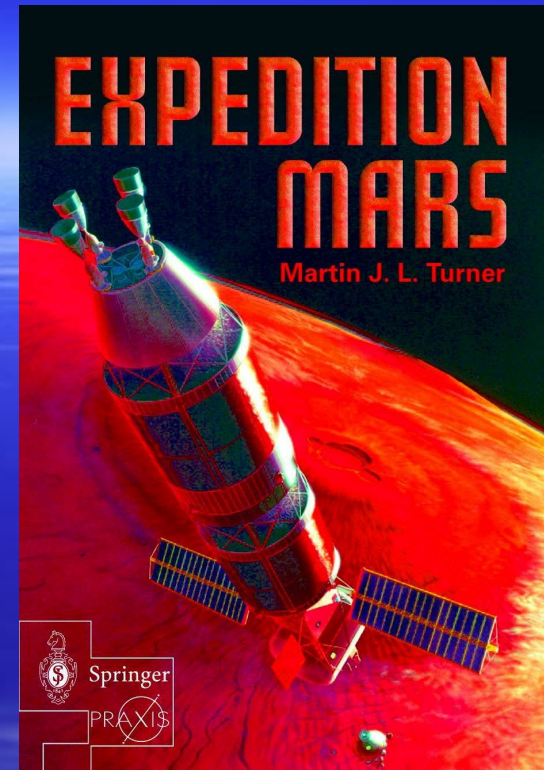
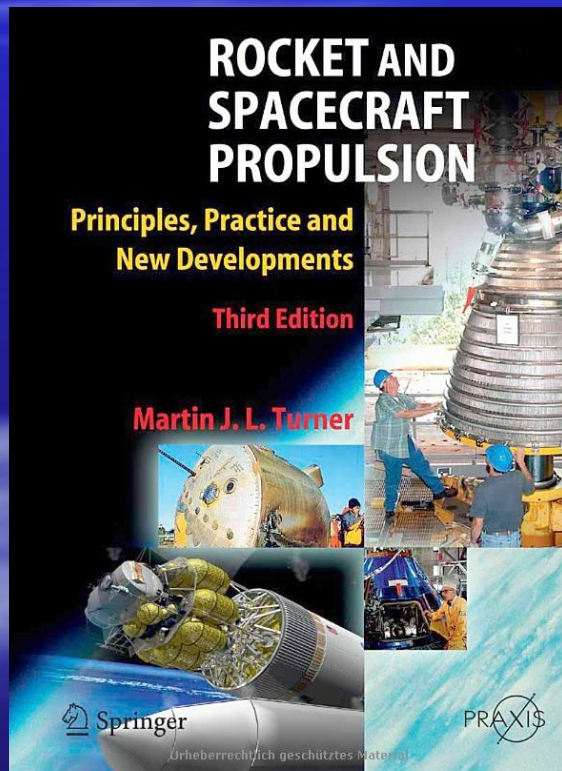
NGXO workshop proceedings



Poster for first XEUS workshop @ ESTEC in 1999



meanwhile – in his spare time ..
.....two definitive textbooks on
Space



and an audience with
Queen Elizabeth II



Professor Martin John Leslie Turner (1942-2009)

- a gifted experimental scientist
- an optimist with a love of life
- a talented writer and lover of music
- a devoted family man
- and for me – and many others here I'm sure –
a very special colleague and friend

